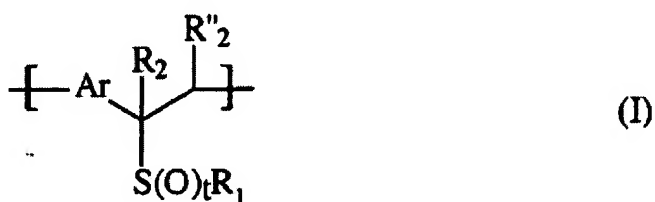


Amendments to the Claims:

A listing of the entire set of pending claims (including amendments to the claims, if any) is submitted herewith per 37 CFR 1.121. This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Currently Amended) A method of preparing a polymer which comprises structural units of formula I,



in which formula:

Ar is an aromatic cyclic system with 4 to 20 carbon atoms, which may be substituted with a substituent chosen from among the group consisting of a non-branched C<sub>1</sub>-C<sub>20</sub>-alkyl, a C<sub>3</sub>-C<sub>20</sub>-alkoxy, a C<sub>1</sub>-C<sub>20</sub>-alkylsulfate, a branched C<sub>3</sub>-C<sub>20</sub>-alkyl, a phenyl or group, and a benzyl group and which may comprise up to 4 heteroatoms chosen from the group ~~comprising~~ consisting of oxygen, sulfur, and nitrogen in the aromatic cyclic system,

t is equal to 0, 1, or 2,

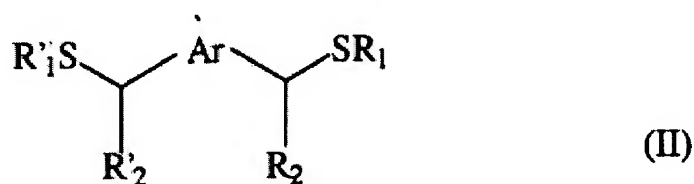
R<sub>1</sub> is chosen from the group ~~comprising~~ consisting of a non-branched C<sub>1</sub>-C<sub>20</sub>-alkyl group, a branched C<sub>3</sub>-C<sub>20</sub> alkyl group, a cyclic C<sub>4</sub>-C<sub>20</sub>-alkyl group, a C<sub>1</sub>-C<sub>4</sub>-alkyl-substituted cyclic C<sub>4</sub>-C<sub>20</sub>-alkyl group, a phenyl group and a benzyl group, which groups may comprise heteroatoms,

## Amendment

Reply to Office Action of 19 November 2004

$R_2$  and  $R'_2$  are each chosen from the group ~~comprising~~ consisting of a hydrogen atom, ~~and~~ a  $C_1$ - $C_{20}$ -alkyl group, and a  $C_4$ - $C_{20}$ -aryl group, which groups may comprise substituents,

characterized in that the method starts with a compound having the formula II



in which formula

$R'_1$  is chosen from the group ~~comprising~~ consisting of a non-branched  $C_1$ - $C_{20}$ -alkyl group, a branched  $C_3$ - $C_{20}$  alkyl group, a cyclic alkyl group, a  $C_1$ - $C_4$ -alkyl-substituted cyclic alkyl group, a phenyl group, and a benzyl group, which groups may comprise heteroatoms,

$R_1$ ,  $R_2$ , and Ar are equal to  $R_1$ ,  $R_2$ , and Ar in formula I, and

$R'_2$  is chosen from the group ~~comprising~~ consisting of a hydrogen atom ~~and~~, a  $C_1$ - $C_{20}$ -alkyl group, and a  $C_4$ - $C_{20}$ -aryl group, which groups may comprise substituents,

and that the polymer with structural units of the formula I is prepared through polymerization with the aid of a base into a polymer which comprises units having the formula III



in which formula

- $R_1$ ,  $R_2$ , and Ar are equal to  $R_1$ ,  $R_2$ , and Ar in formula II, and
- $R'_2$  is chosen from the group comprising  $R_2$  and  $R'_2$ ,

and for the preparation of the polymer with units having the formula I, in which formula t is equal to 1 or 2, through oxidation of at least a number of the units of the polymer having the formula III.

2. (Currently Amended) A method as claimed in claim 1, characterized in that the method starts with a compound having the formula II in which  $-\text{Ar}-$  is the unit having the formula IV



in which formula

X is chosen from the group consisting of O, S,  $\text{NR}_6$ ,  
 $R_2$  and  $R'_3$  are chosen from the group ~~comprising~~ consisting of a hydrogen atom,  
a chlorine atom, a bromine atom, a fluorine atom, ~~and~~ an iodine atom,  
a  $\text{C}_1$ - $\text{C}_4$ -alkyl group, a carbonitryl group, a trihalomethyl group, a  
hydroxy group, a nitro group, an amino group, a carboxyl group, a  
sulfoxyl group, a sulfonate group, ~~and~~ a carbonate group, ~~and~~ a  
substituted and non-substituted phenyl group, an alkaryl group, ~~and~~  
an alkalkyl group, an alkoxy group, and a thioalkoxy group, and

R<sub>6</sub> is chosen from the group ~~comprising~~ consisting of a hydrogen atom and a C<sub>1</sub>-C<sub>20</sub>-alkyl group, an aryl group, a C<sub>1</sub>-C<sub>20</sub>-alkylaryl group, and an arylalkyl group.

3. (Currently Amended) A method as claimed in claim 1, characterized in that the method starts with a compound having the formula II in which -Ar- is the unit having the formula V



in which formula

R<sub>5</sub>, R<sub>5</sub>', R<sub>5</sub>'', and R<sub>5</sub>''' are chosen from the group ~~comprising~~ consisting of a hydrogen atom, a chlorine atom, a bromine atom, a fluorine atom, and an iodine atom, and a C<sub>1</sub>-C<sub>22</sub>-alkyl group, a carbonitryl group, a trihalomethyl group, a hydroxy group, a nitro group, an amino group, a carboxyl group, a sulfoxyl group, a sulfonate group, and a carbonitrate group, and an optionally substituted phenyl group, a C<sub>1</sub>-C<sub>22</sub>-alkylaryl group, and a C<sub>1</sub>-C<sub>22</sub>-arylalkyl group, a C<sub>1</sub>-C<sub>22</sub>-alkoxy group, and a C<sub>1</sub>-C<sub>22</sub>-thioalkoxy group.

4. (Withdrawn) A method of preparing compounds having the formula II in which formula:

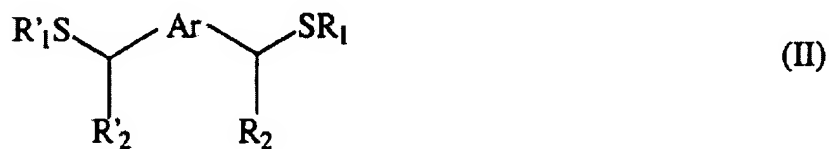


Ar is an aromatic cyclic system with 4 to 20 carbon atoms, which may be substituted with a substituent chosen from the group comprising a non-branched C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>3</sub>-C<sub>20</sub>-alkoxy, C<sub>1</sub>-C<sub>20</sub>-alkylsulfate, a branched C<sub>3</sub>-C<sub>20</sub>-alkyl, phenyl or benzyl group and which may comprise up to 4 heteroatoms chosen from the group comprising oxygen, sulfur, and nitrogen in the aromatic cyclic system,

R<sub>1</sub> and R<sub>1</sub>' are chosen from the group comprising a non-branched C<sub>1</sub>-C<sub>20</sub>-alkyl group, a branched C<sub>3</sub>-C<sub>20</sub> alkyl group, a cyclic alkyl group, a C<sub>1</sub>-C<sub>4</sub>-alkyl-substituted cyclic alkyl group, a C<sub>4</sub>-C<sub>14</sub>-aryl group, and a benzyl group, which groups may comprise heteroatoms,

R<sub>2</sub> and R<sub>2</sub>' are chosen from the group comprising a hydrogen atom and a C<sub>1</sub>-C<sub>20</sub>-alkyl and a C<sub>4</sub>-C<sub>20</sub>-aryl group, which groups may comprise substituents, characterized in that H-Ar-H reacts with R<sub>1</sub>SH and R<sub>2</sub>(C=O)-H and with R<sub>1</sub>'SH and R<sub>2</sub>'-(C=O)-H so as to form the compound having the formula II.

5. (Withdrawn) Compounds having the formula II



in which formula

Ar is an aromatic cyclic system with 4 to 20 carbon atoms, which may be substituted with a substituent chosen from the group comprising a non-branched C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>3</sub>-C<sub>20</sub>-alkoxy, C<sub>1</sub>-C<sub>20</sub>-alkylsulfate, a

branched C<sub>3</sub>-C<sub>20</sub>-alkyl, phenyl or benzyl group, and which may comprise up to 4 heteroatoms chosen from the group comprising oxygen, sulfur, and nitrogen in the aromatic cyclic system,

R<sub>1</sub> and R'<sub>1</sub> are chosen from the group comprising a non-branched C<sub>1</sub>-C<sub>20</sub>-alkyl group, a branched C<sub>3</sub>-C<sub>20</sub>-alkyl group, a cyclic alkyl group, a C<sub>1</sub>-C<sub>4</sub>-alkyl-substituted cyclic alkyl group, a C<sub>4</sub>-C<sub>14</sub>-aryl group, and a benzyl group, which groups may comprise heteroatoms,

R<sub>2</sub> is chosen from the group comprising a C<sub>1</sub>-C<sub>20</sub>-alkyl and C<sub>4</sub>-C<sub>20</sub>-aryl group, which groups may comprise substituents, and

R'<sub>2</sub> is chosen from the group comprising a hydrogen atom, a C<sub>1</sub>-C<sub>20</sub>-alkyl, and a C<sub>4</sub>-C<sub>20</sub>-aryl group, which groups may contain substituents.

6. (Currently Amended) Polymers with structural units having the formula III, in which formula:



Ar is an aromatic cyclic system with 4 to 20 carbon atoms, which may be substituted with a substituent chosen from the group comprising consisting of a non-branched C<sub>1</sub>-C<sub>20</sub>-alkyl group, C<sub>3</sub>-C<sub>20</sub>-alkoxy group, C<sub>1</sub>-C<sub>20</sub>-alkylsulfate group, a branched C<sub>3</sub>-C<sub>20</sub>-alkyl group, phenyl group or and a benzyl group, and which may comprise up to 4 heteroatoms

chosen from the group ~~comprising~~ consisting of oxygen, sulfur, and nitrogen in the aromatic cyclic system,

R<sub>1</sub> is chosen from the group ~~comprising~~ consisting of a non-branched C<sub>1</sub>-C<sub>20</sub>-alkyl group, a branched C<sub>3</sub>-C<sub>20</sub> alkyl group, a cyclic C<sub>4</sub>-C<sub>20</sub>-alkyl group, a C<sub>1</sub>-C<sub>4</sub>-alkyl-substituted cyclic C<sub>4</sub>-C<sub>20</sub>-alkyl group, a phenyl group and a benzyl group, which groups may comprise heteroatoms, and

R<sub>2</sub> and R''<sub>2</sub> are chosen from the group ~~comprising~~ consisting of a hydrogen atom ~~and~~, a C<sub>1</sub>-C<sub>20</sub>-alkyl group, and a C<sub>4</sub>-C<sub>20</sub>-aryl group, which groups may comprise substituents.

7. (Cancelled)

8. (Currently Amended) A composition of polymers with structural units having the formula IX:



in which

Ar is an aromatic cyclic system with 4 to 20 carbon atoms, which may be substituted with a substituent chosen from the group ~~comprising~~ consisting of a non-branched C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>3</sub>-C<sub>20</sub>-alkoxy-group, a C<sub>1</sub>-C<sub>20</sub>-alkylsulfate group, a branched C<sub>3</sub>-C<sub>20</sub>-alkyl group, a phenyl group ~~or~~, and a benzyl group and which may comprise up to 4 heteroatoms

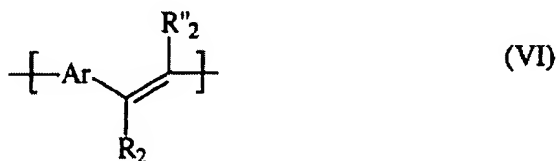
chosen from the group ~~comprising~~ consisting of oxygen, sulfur, and nitrogen in the aromatic cyclic system,

$R_2$  and  $R''_2$  are chosen from the group ~~comprising~~ consisting of a hydrogen atom and, a  $C_1$ - $C_{20}$ -alkyl group, and a  $C_4$ - $C_{20}$ -aryl ~~groups~~ group, which groups may optionally comprise substituents, and

Z is chosen from a group ~~comprising~~ consisting of  $S(O)_pR_1$ ,  $OR_2$ , in which p is equal to 0, 1 or 2, and  $R_1$  and  $R_2$  are chosen from the group comprising a non-branched  $C_1$ - $C_{20}$ -alkyl group, a branched  $C_3$ - $C_{20}$ -alkyl group, a cyclic  $C_4$ - $C_{20}$ -alkyl group, a  $C_1$ - $C_4$ -alkyl-substituted cyclic  $C_4$ - $C_{20}$ -alkyl group, a phenyl group, and a benzyl group, which groups may contain heteroatoms,

wherein a first fraction of the composition comprises polymers with structural units having the formula IX with Z equal to  $S(O)_pR_1$  and a chain length of 50 to 1000 units, and a second fraction of the composition comprises polymers with a chain length of more than 1000 units.

9. (Withdrawn) A method of preparing a polymer with structural units having the formula VI,



in which formula:

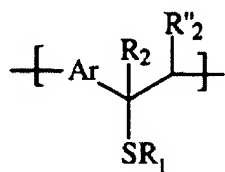
Ar is an aromatic cyclic system with 4 to 20 carbon atoms, which may be substituted with a substituent chosen from among a non-branched



C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>3</sub>-C<sub>20</sub>-alkoxy-, C<sub>1</sub>-C<sub>20</sub>-alkylsulfate, a branched C<sub>3</sub>-C<sub>20</sub>-alkyl, phenyl or benzyl group and which may comprise up to 4 heteroatoms chosen from the group comprising oxygen, sulfur, and nitrogen in the aromatic cyclic system, and

R<sub>2</sub> and R''<sub>2</sub> are chosen from the group comprising a hydrogen atom and a C<sub>1</sub>-C<sub>20</sub>-alkyl and C<sub>4</sub>-C<sub>20</sub>-aryl group, which groups may comprise substituents, wherein a polymer comprising structural units having the formula III is directly converted into the polymer comprising structural units of the formula VI by heating under catalysis of acid,

(III)

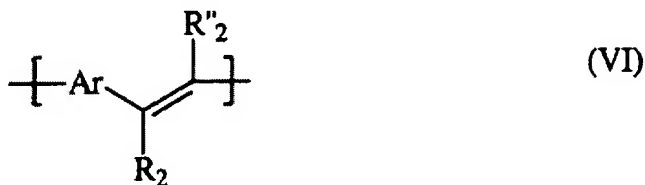


in which formula III

R<sub>1</sub> is chosen from the group comprising a non-branched C<sub>1</sub>-C<sub>20</sub>-alkyl group, a branched C<sub>3</sub>-C<sub>20</sub> alkyl group, a cyclic C<sub>4</sub>-C<sub>20</sub>-alkyl group, a C<sub>1</sub>-C<sub>4</sub>-alkyl-substituted cyclic C<sub>4</sub>-C<sub>20</sub>-alkyl group, a phenyl group and a benzyl group, which groups may comprise heteroatoms, and

Ar, R<sub>2</sub> and R''<sub>2</sub> are equal to Ar, R<sub>2</sub> and R''<sub>2</sub> in formula VI.

10. (Withdrawn) A method of manufacturing a layer of a polymer with structural units having the formula VI,



in which formula:

Ar is an aromatic cyclic system with 4 to 20 carbon atoms, which may be substituted with a substituent chosen from among a non-branched C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>3</sub>-C<sub>20</sub>-alkoxy, C<sub>1</sub>-C<sub>20</sub>-alkylsulfate, a branched C<sub>3</sub>-C<sub>20</sub>-alkyl, phenyl or benzyl group and which may comprise up to 4 heteroatoms chosen from the group comprising oxygen, sulfur, and nitrogen in the aromatic cyclic system, and

R<sub>2</sub> and R'<sub>2</sub> are chosen from the group comprising a hydrogen atom and a C<sub>1</sub>-C<sub>20</sub>-alkyl and C<sub>4</sub>-C<sub>20</sub>-aryl group, which groups may comprise substituents, which method comprises

- the application of a solution of the polymer comprising structural units having the formula I as a layer on a substrate,



in which formula I:

- t is equal to 0, 1 or 2,
- R<sub>1</sub> is chosen from the group comprising a non-branched C<sub>1</sub>-C<sub>20</sub>-alkyl group, a branched C<sub>3</sub>-C<sub>20</sub> alkyl group, a cyclic C<sub>4</sub>-C<sub>20</sub>-alkyl group, a C<sub>1</sub>-

- C<sub>4</sub>-alkyl-substituted cyclic C<sub>4</sub>-C<sub>20</sub>-alkyl group, a phenyl group, and a benzyl group, which groups may comprise heteroatoms, and
- R<sub>2</sub>, R''<sub>2</sub>, and Ar are equal to R<sub>2</sub>, R''<sub>2</sub> and Ar, respectively, in formula VI, and
  - the conversion through beating of the polymer comprising structural units of the formula I into the polymer comprising structural units of the formula VI, characterized in that the solution to be provided as a layer comprises a polymer with structural units having the formula I, with a chain length of at least 50 and at most 1000 units.
11. (Withdrawn) A method as claimed in claim 10, characterized in that the solution to be provided as a layer also comprises a polymer with structural units having the formula I, with a chain length of at least 50 and at most 1000 units.
12. (Withdrawn) A method as claimed in claim 10, characterized in that
- the method starts with a solution of a polymer with structural units having the formula I, in which p is equal to 0, and
  - the polymer with structural units having the formula I, in which p is equal to 0, is oxidized with a peroxide prior to the application of the solution as a layer, such that a polymer with structural units having the formula I is created in which p is equal to 1 in at least a proportion of the units.
13. (Withdrawn) A method as claimed in claim 10, characterized in that:

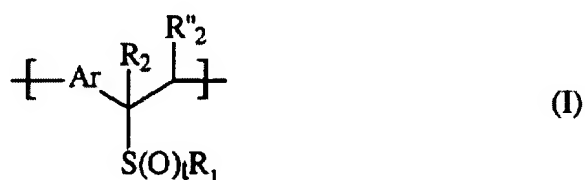
- the solution applied as the layer on the substrate contains the polymer with structural units having the formula I, in which p is equal to 0, and
- the conversion through heating is catalysed by acid.

14. (Withdrawn) An electronic device comprising a layer of a polymer with mainly the structural units having the formula VI:



in which formula:

Ar is an aromatic cyclic system with 4 to 20 carbon atoms, which may be substituted with a substituent chosen from the group comprising a non-branched C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>3</sub>-C<sub>20</sub>-alkoxy, C<sub>1</sub>-C<sub>20</sub>-alkylsulfate, a branched C<sub>3</sub>-C<sub>20</sub>-alkyl, phenyl or benzyl group and which may comprise up to 4 heteroatoms chosen from the group comprising oxygen, sulfur, and nitrogen in the aromatic cyclic system, and R<sub>2</sub> and R'<sub>2</sub> are chosen from the group comprising a hydrogen atom and a C<sub>1</sub>-C<sub>20</sub>-alkyl and C<sub>4</sub>-C<sub>20</sub>-aryl group, which groups may comprise substituents, characterized in that the polymer is prepared from at least a polymer with structural units having the formula I, with a chain length of at least 50 and at most 1000 units,



- t is equal to 0, 1, or 2,
- R<sub>1</sub> is chosen from the group comprising a non-branched C<sub>1</sub>-C<sub>20</sub>-alkyl group, a branched C<sub>3</sub>-C<sub>20</sub>-alkyl group, a cyclic C<sub>4</sub>-C<sub>20</sub>-alkyl group, a C<sub>1</sub>-C<sub>4</sub>-alkyl-substituted cyclic C<sub>4</sub>-C<sub>20</sub>-alkyl group, a phenyl group, and a benzyl group, which groups may comprise heteroatoms, and
- R<sub>2</sub>, R'<sub>2</sub> and Ar are identical to R<sub>2</sub>, R''<sub>2</sub>, and Ar, respectively, in formula VI.